

DISCUSSION OF THE AMENDMENT

Due to the length of the specification herein, Applicants will cite to the paragraph number of the published patent application (PG Pub) of the present application, i.e., US 2006/0078640, when discussing the application description, both in this section and in the Remarks section, *infra*, rather than to page and line of the specification as filed.

A typographical error has been corrected in the Abstract.

Claim 11 has been amended into independent form. Claims 1, 4-6, 9 and 10 have been canceled. Claims 2, 3, 7 and 8 have been amended to depend on Claim 11. Claim 11 has been further amended, and Claims 12 and 13 amended, for purposes of clarification only. Claim 14 has been amended by deleting superfluous matter. Claim 16 has been amended, as supported by Claim 9.

New Claims 17-19 have been added. Claims 17-18 are supported in the specification at paragraph [0034]. Claim 19 is supported in the specification at paragraph [0059].

No new matter is believed to have been added by the above amendment. Claims 2, 3, 7, 8 and 11-19 are now pending in the application.

REMARKS

The rejections under 35 U.S.C. § 103(a) of Claims 10, 11, 12, 13 and 16 as unpatentable over US 3,988,098 (Kato et al), and of Claims 14 and 15 as unpatentable over Kato et al in view of US 4,636,345 (Jensen et al), are respectfully traversed.

As described in the specification under Background Art, beginning at paragraph [0002], belt-type continuous plate manufacturing apparatuses are known but have been problematical. The present invention is directed to addressing problems of the prior art.

As recited in above-amended Claim 11, an embodiment of the present invention is a method of producing a plate polymer obtained from a polymerizable raw material comprising methyl methacrylate, said method comprising using a belt type continuous plate manufacturing apparatus, which apparatus comprises two endless belts so placed that their facing belt surfaces run toward the same direction at the same speed, and continuous gaskets running under condition of being sandwiched by belt surfaces at their both side edge portions, wherein the polymerizable raw material is fed into a space surrounded by the facing belt surfaces and the continuous gaskets from its one end, the polymerizable raw material is solidified together with running of the belts in a heating zone, and the plate polymer is taken out from the other end, wherein a plurality of upper and lower roll pairs each composed of an upper roll in contact with the upper surface of the upper belt and a lower roll in contact with the lower surface of the lower belt and having axes orthogonally crossing the belt running direction are placed along the belt running direction as a belt surface holding mechanism for the endless belts facing each other and running in the heating zone, the outer diameter D of the roll body portion of the upper and lower roll pairs is in the range of 100 mm to 500 mm, polymerization proceeds in the heating zone and a temperature peak caused by heat of polymerization is attained at a position in said zone, and at least 4% of the total number of

upper and lower roll pairs placed between the raw material feeding end and the position of said temperature peak contain a lower roll body portion having a crown shape.

To meet the terms of Claim 11, the Examiner relies on Fig. 17 and the description thereof at the paragraph bridging columns 20 and 21. Kato et al discloses therein that the center shaft in the idle roller is actively deflected to support the load supplied to belt surface in order to improve the accuracy of plate thickness. The endless belts 1 and 2 suffer a liquid pressure of polymeric compound and a reactionary force caused by compression of gasket 10. The pressure and the force are massed on the ends of center shaft 29 via bearing unit 30. The center shaft 29 is produced therein a deflection by the load W applied in the Y point and the reactionary force W produced in the support X at the shaft end (column 21, lines 3-9). Therefore, the surfaces of upper and lower rolls are maintained as horizontal while the center shafts are deflected so that the shafts appear to look like a crown shape (Fig. 17).

The presently-claimed invention, on the other hand, requires that at least 4% of the total number of upper and lower roll pairs placed between the raw material feeding end and a position in the heating zone at which a temperature peak caused by heat of polymerization is attained contain a lower roll body portion having a crown shape, i.e., crown roll, in order to improve the accuracy of plate thickness.

The shafts deflected like a crown shape in Kato et al are significantly different from the crown roll in the present invention. In Kato et al, the deflection of the end shaft acts to counteract the load on the belt surface to improve the accuracy of plate thickness. In the presently-claimed invention, on the other hand, even if the roll body of the lower roll is deflected by the load, the surface of the roll body contacting the belt is maintained as horizontal because it is a the crown roll. The crown roll acts to eliminate the centrally thickened shape without increasing the roll body diameter and the roll pair spacing, as

described in the specification herein at paragraphs [0019] and [0032], and proven by Examples 2 and 3 of the specification.

Jensen et al has been relied on for a disclosure of adjustable compression springs. However, even if Jensen et al were combined with Kato et al, the result would still not be the presently-claimed invention.

For all the above reasons, it is respectfully requested that the rejections be withdrawn.

The rejection of Claims 11-13 under 35 U.S.C. § 112, second paragraph, as indefinite, is respectfully traversed. Indeed, the rejection would now appear to be moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that the rejection be withdrawn.

The objection of Claims 10-16 as being dependent on non-elected claims that have been withdrawn is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that the objection be withdrawn.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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